Rhodora

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NOTES FROM THE WOODS HOLE LABORATORY—1928.

I. F. Lewis and W. R. Taylor.

(Plate 176).

Oedogonium Reinschii Roy sec. Hirn. For several seasons past many collections from the ice pond (Sheep Pond) on the northwest shore of Cuttyhunk Island have contained scattered specimens of an *Oedogonium*, the species of which apparently could not be determined, since the material was never found in fruiting condition. While examining a collection containing this material during the summer of 1927 the author was struck by the resemblance of this plant to the illustration of *Oe. Reinschii* shown by W. Heering[1] (fig. 342), with a description (p. 226) as follows:

135. *Oedogonium Reinschii* Roy sec. Hirn. (Fig. 342)—Vegetative Zellen meist fast sechseckig oder fast ellipsoidisch, nur einige zylindrisch oder fast zylindrisch. Basalzelle fast halbkugelig, Endzelle stumpf. Vegetative Zellen 6–9(–11) μ dick, 1¼–2¼ mal so lang, Basalzelle 8–9 μ dick, 5–6 μ hoch. Fruktifikationsorgane gänzlich unbekannt.

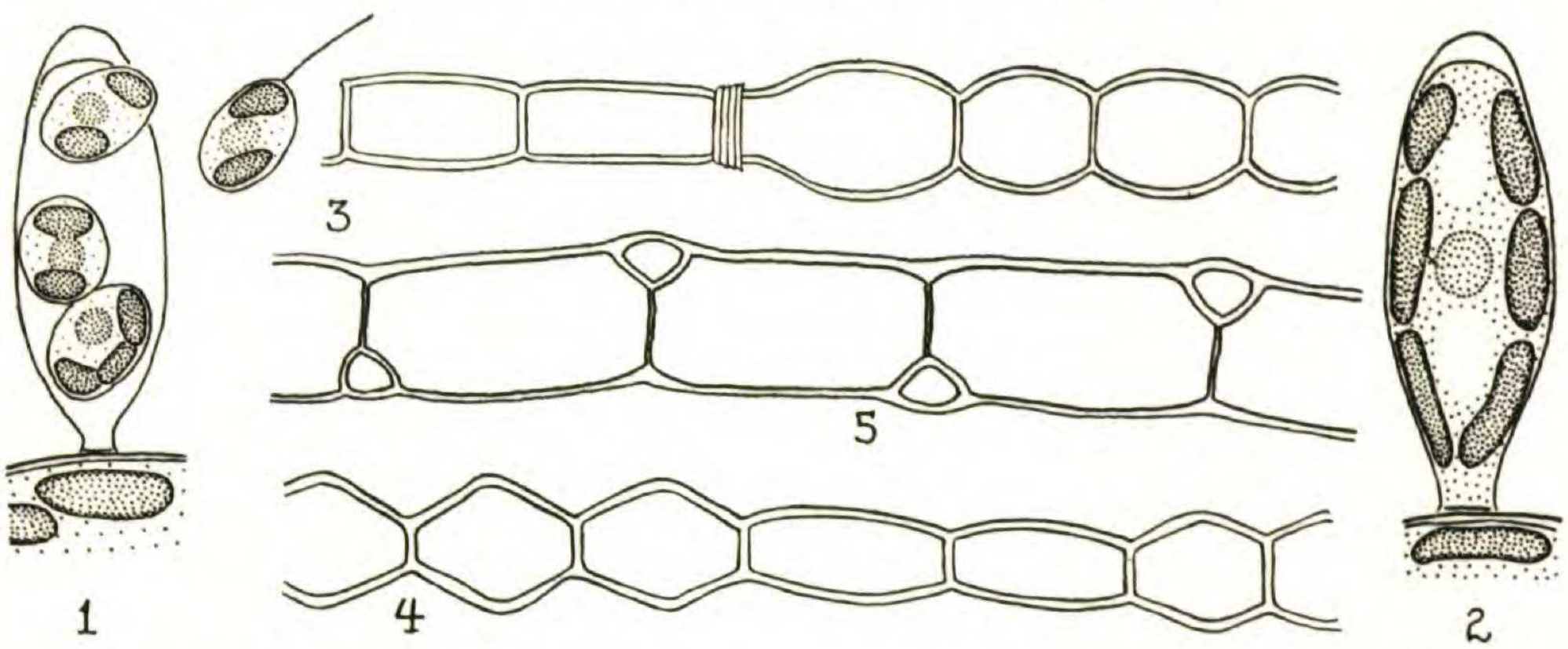
Material showing the basal cell or the terminal cell of a filament was not found, but measurements of the vegetative cells correspond very closely to those given by Heering and a comparison of the accompanying sketches (Text-figs. 3, 4) with the description and with Heering's illustration will suggest that in all probability this plant from Cuttyhunk should be recognized as *Oe. Reinschii*. Comparison with the more complete description given by Hirn[2] tends to confirm the determination. The illustrations of this species in this

[1] Heering, W., in A. Pascher, Die Süsswasserflora Deutschlands, Oesterreichs und der Schweiz, Heft **6**: 1914.

[2] Hirn, K. Monographie und Iconographie der Oedogoniaceen. Acta Soc. Sci. Fennicae, Vol. **7**. 1900

work (Pl. 50) are too inadequate to serve as a certain basis for comparison. Hirn lists the plant as occurring in many parts of continental Europe and in Scotland, in Paraguay, but gives no record for North America. Collins[1] gives a station for it in Florida. The present note, therefore, lists it for a new station on Cuttyhunk Island, Barnstable County, Massachusetts.—James P. Poole.

Characiopsis **pileata** Copeland, n. sp. Plant ovoid, attached; chromatophores six, in definite positions: two in the basal third of the cell, two at the middle, and two near the apex, each pair forming a band around the cell, and the six lining the cell wall except at the apex; nucleus at or near the center of the cell; two vacuoles present, one above and one below the nucleus; cell wall thickened at the apex, forming a conspicuous hemispherical cap; stalk short, not expanded into a basal disk; cell 14 to 19 μ by 6 to 7 μ (Text-fig. 2.).



The apex of the cell is never pointed, but always rounded. The apical thickening of the wall distinguishes this species and *C. crassiapex* Prinz from all other members of the genus. From *C. crassiapex* it differs in the rounded rather than pointed cell apex, the absence of a basal disk and the definite number and arrangement of the chromatophores. Reproduction is by zoospores with one visible flagellum, of which four are produced in a cell (Text-fig. 1). These are freed through an irregular pore in the cell wall near the apex. After swimming about for a short time, they become attached and developed directly into the stalked plants. This species is found on filamentous algae, espeeially on *Tribonema* and *Microspora*, in freshwater ponds. It has been found on Nashawena Island and in ponds in Falmouth, Massachusetts.—Joseph J. Copeland.

Gongrosira Debaryana Rabenh., newly reported for the state,

[1] Collins, F. S. Green algae of North America, Second Supplement. Tufts College Studies, Vol. **4.** 1918.

was secured from the back of a snapping turtle in Sheep Pond, Cuttyhunk, Massachusetts.

MERISMOPEDIA TENUISSIMA Lemm., M. ELEGANS A. Br., COELOSPHAERIUM NAEGELIANUM Ung., CHROOCOCCUS MINUTUS (Kg.) Naeg., and APHANOCAPSA PULCHRA (Kg.) Rabenh., were secured from Oyster Pond, Falmouth, Massachusetts, growing among filamentous algae upon *Chara*, July 31, 1927. These are new records for the state.

LAMINARIA PLATYMERIS De la Pyl., ordinarily a northern species, was secured from the pilings of the wharf at Penikese Island, Massachusetts, during July in 1923, 1924, and 1925.

ACROTHRIX sp.—A large and interesting alga of this genus, not previously recorded from New England, has appeared at several stations and will be described in detail elsewhere.[1]

DUMONTIA FILIFORMIS (O. F. Müller) Grev. was some time ago reported as having appeared on the New England coast. It has, apparently of recent years, reached the Buzzards Bay area, and has been found in abundance: at first at Cuttyhunk Island near the Life Saving Station, and later at Grassy and Pine Islands, off Woods Hole, Penikese Island, and on a small peninsula projecting from Sconticut Point near New Bedford, Massachusetts.

SEIROSPORA GRIFFITHSIANA Harv. Although rare in the early summer months, this species is quite abundant around Woods Hole by August, thus agreeing with Farlow's[2] statement that it is one of the commonest of the Callithamnieae south of Cape Cod. *S. Griffithsiana* is characterized by the presence of seirospores, which are borne in crowded branched chains at the end of the filaments. Tetraspores and bispores also occur on European specimens, both on the same individuals as seirospores as well as on separate plants. The sexual organs, although described, occur but rarely. While specimens bearing seirospores commonly occur in the vicinity of Woods Hole, Farlow's statement (loc. cit.) that "no form of tetraspore or bispore has been observed on American specimens" has hitherto held true. However, among material dredged in 4–6 feet of water off the Coal Wharf at Woods Hole and in 50 feet off West Chop, Marthas Vineyard, during August, 1927, there were several specimens bearing both tetraspores and bispores. Judging from the measurements

[1] Taylor, W. R., *in* Amer. Jour. Bot., 1928.

[2] Farlow, W. G. The marine algae of New England. Rept. U. S. Comm. Fish and Fisheries for **1879,** Appendix A-1. 1881.

given by Farlow (loc. cit.) these plants had not yet attained their maximum size and although bearing seirospores in large numbers, tetrasporangia and bisporangia were not uncommon. In some cases they were quite abundant, but no tetrasporic or bisporic specimens without seirospores have been observed. Since the tetrasporangium does not divide by successive bipartitions it is an easy matter to distinguish the developing tetrasporangium from a mature bisporangium. It is interesting to note that on the Woods Hole material there occur abnormal tetrasporangia and bisporangia, produced by irregularities in the lines of division and closely resembling those recorded by Rosenvinge[1] (p. 349, fig. 278) as occuring on the Danish specimens.—K. M. Drew.

Trailiella intricata Batters. This species was found in considerable abundance at Nobska Point near Woods Hole and Black Rock near New Bedford, Massachusetts during the summer of 1927 [and 1928] occurring most commonly in the tidal wash. It has been found only occasionally on attached specimens of the host plants—*Chondrus crispus*, *Phyllophora membranifolia* and *Ahnfeldtia plicata*. The early records of this extremely interesting species were confined to European waters, but recently Kylin[2] (p. 44, fig. 25a) has recorded its occurrence at Friday Harbor, Washington in 1924. It was first reported by Batters[3] (p. 10) as occurring on the south coast of England in 1890. The next record came from Limfjord, Denmark in 1901, and then from the Kattegat near Frederikshavn in 1909 (Rosenvinge,[5] p. 305–308, figs. 213–215 bis.). Meanwhile it had been found by Kylin[4] (p. 83–92, fig. 2) on the west coast of Sweden between 1902 and 1906, and by Rosenvinge in 1907 on the southeast coast of Norway and later, in 1916, on the west coast. It was also reported by Kuckuck[5] (p. 135) from Helgoland in 1915. The New England specimens agree closely with Batters' original description of the type. The plant forms dense rose-red tufts often reaching a diameter of 3.5 cm. In June the tufts consist almost entirely of basal creeping fila-

[1] Rosenvinge, L. K. The marine algae of Denmark, Pt. 3. Kgl. Danske Vidensk. Selsk. Skrifter, 7. Raekke, Natur. Math. Afd., **7** (3). 1923–1924.

[2] Kylin, H. The marine red algae in the vicinity of the Biological Station at Friday Harbor, Wash. Lunds Univ. Årsskr., N. F. Avd. 2, **21** (9). 1925.

[3] Batters, E. A. L. Some new British marine algae. Journal of Botany, **34.** 1896.

[4] Kylin, H. Ueber *Spermothamnion roseolum* (C. Ag.) Pringsh. und *Trailiella intricata* Batters. Bot. Notiser. **1916.**

[5] Kuckuck, P. (Ref.: H. Kylin. Ueber die Blazenzellen einiger Florideen und ihre Beziehung zur Abspaltung von Jod. Ark. Bot. **14:** 1–13. 1915.) Zeit. Bot. **8:** 135–136. 1916.

ments, but as the season progresses the erect filaments become both longer and more numerous. In the New England specimens the cells of the creeping filaments measure 30–42 μ diam., and are 1–2 times as long. They give rise to discoid multicellular hapteres at irregular intervals, and also to the diffusely and sparsely branched erect filaments. The branches of these erect filaments are markedly divaricate, and arise near the center of the cell. The cells of the erect filaments are slightly barrel shaped, averaging 26 μ (25–30 μ) in diameter, and 1½–2½ times (rarely to 3 times) as long. Towards the apex the cells decrease considerably in length, but only slightly in diameter. The filaments are distinguished by the presence of abundant refractive gland cells, 10–15 μ in diameter (text-fig. 5), borne sub-distichously at the upper ends of the parent cells. Macroscopically this species closely resembles *Spermothamnion Turneri* (Mert.) Aresch., with which it has been confused, but differs from that species in the much shorter, uninucleate, barrel shaped cells, the branched, multicellular holdfasts, the abundant gland cells as well as the complex mode of origin of the tetrasporangium so unlike that of *Spermothamnion* and other genera of the Ceramiaceae. So far no fertile material has been found in this region, as might be expected, since the European records show that tetrasporic specimens have not been found there before September. For a fuller description and figures of *Trailliella intricata* see Rosenvinge (loc. cit.).—K. M. Drew and A. C. Hof.

Asparagopsis hamifera (Hariot) Okam. This very striking plant appeared July 18–19, 1927 for the first time on record upon Nobska Point near Woods Hole, Massachusetts, the first specimen being detected by Miss Irene Fort. The material was all drifted ashore, the pieces small but mostly in very good condition. The plants were rather dense of aspect, with relatively few crozier tips on most individuals (Plate 176). All were carposporic, some quite richly fruiting. This appears to be the first occurrence of the genus and the family (Bonnemaisoniaceae) on the eastern coast of North America. In 1928 the plant was more frequent, pieces being secured from the original locality on several occasions. One of these reached a length of 11 cm., the main axis was 1.5 mm. in diameter with numerous lateral branches to 3.5 cm. long, the ultimate ramuli 1.5 mm. long and the plant of bushy, virgate habit and rather stiff. This is quite different from the habit of the European (French)

material and would tempt one to describe it as new were it not for the similarity of microscopic details and for the fact that two large pieces (one 11 cm.) collected at Cuttyhunk Island by Miss Mary L. Rollins were very soft. These had a main axis to 2 mm. diameter, the longest lateral branch was 4.5 cm., and one piece bore crozier tips to 3 mm. across their curve. The ultimate ramuli were soft and somewhat penicillate-tufted, measuring 3 mm. long. These plants were apparently sterile. *Asparagopsis* was also secured in considerable quantities at Black Rock near New Bedford. In addition to the drifted specimens it was found sparsely in a dwarfed condition upon *Chondrus* within reach by wading along the edge of the islet. This species is not abundantly represented in the algal herbarium of the New York Botanical Garden, and since a microscopical study of the specimens there failed to give definite characters to separate the present material it seems best to report it under the name applied to the European plant. The $^{5}/_{6}$-size illustration (Plate 176) is of portions of a cystocarpic plant of moderately stiff habit and the kind most generally secured. Two crozier-tips, shrunken in drying, are marked with arrows in the lower row of specimens.—WM. R. TAYLOR.

CAREX MITCHELLIANA AND OTHER RARE PLANTS NEAR COHASSET, MASSACHUSETTS.—Two or three miles south of Cohasset is the little village of Beechwood. In this vicinity are extensive areas of deep woods, where beech is noticeably frequent, and *Ilex opaca* reaches a trunk diameter exceeding six inches. In the midst of them are small cedar swamps, some at least unmarked on the topographic survey maps. On July 22nd one of these small swamps and its surroundings were carefully investigated. The border of the swamp was broken by little rocky cliffs. In the cooler hollows hemlocks and yellow birch grew with *Ilex opaca* and *Ilex glabra*. We were interested to find *Lycopodium clavatum* and *L. lucidulum*, and were astonished to stumble upon an excellent station of *Lycopodium annotinum*, previously known in the local flora only from points north and west of Boston. In several wet little hollows *Corallorhiza trifrida* was frequent, and growing with it in sphagnum were rather small specimens of *Botrychium ramosum*, and some minute little ferns which on the basis of the size and shape of the sterile frond would have to be called *B. simplex*, an association which occurs with